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Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Re: U.S. Patent Application Serial No. 09/667569
For: *Methods and Microorganisms for Production of Panto-Compounds*
Inventors: Yocum, R. Rogers, *et al.*
Filed: September 21, 2000
Our Ref. No.: BGI-141CP

Dear Sir:

I enclose herewith for filing in the above-identified application the following:

1. Information Disclosure Statement;
2. PTO Form 1449;
3. Copies of references cited in PTO Form 1449 (62); and
4. A Return Postcard.

No additional costs are believed to be due in connection with the filing of this Information Disclosure Statement. However, please charge any necessary fees in connection with the enclosed statement to our Deposit Order Account No. 12-0080. For this purpose, a duplicate of this sheet is attached.

Respectfully submitted,
LAHIVE & COCKFIELD, LLP

Debra J. Milasincic, Esq.
Registration No. 46,931
Attorney for Applicants



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Yocum, R. Rogers, *et al.*

Serial No.: 09/667569

Filed: September 21, 2000

For: *Methods and Microorganisms for Production of Panto-Compounds*

Attorney Docket No.: BGI-141CP

Group Art Unit: 1652

Examiner: K. Kerr

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Washington, D.C. 20231

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INFORMATION DISCLOSURE STATEMENT

Dear Sir:

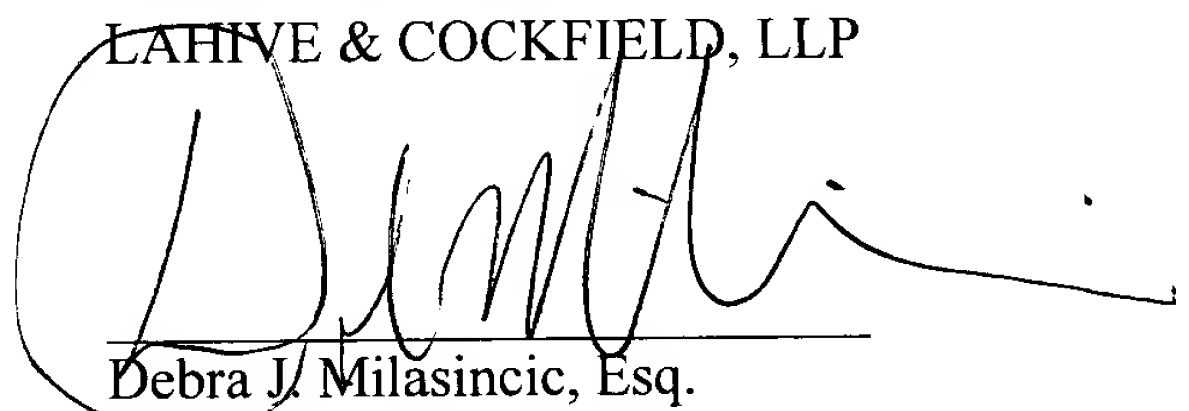
Further to the Information Disclosure Statement mailed to the United States Patent and Trademark Office on July 22, 2002, Applicants and their Attorney hereby *enclose* the references cited on PTO form 1449 for the Examiner's consideration. A copy of each cited publication is enclosed. Copies of translations for references A18, A19, A20 and A21 are also enclosed.

This statement is not to be interpreted as a representation that the cited publications are material, that an exhaustive search has been conducted, or that no other relevant information exists. Nor shall the citation of any publication herein be construed *per se* as a representation that such publication is prior art. Moreover, Applicants understand that the Examiner will make an independent evaluation of the cited publications.

In accordance with 37 CFR §1.97(b)(1), no additional costs are believed to be due in connection with the filing of this Information Disclosure Statement. However, please charge any necessary fees in connection with the enclosed statement to our Deposit Order Account No. 12-0080.

Respectfully submitted,

LAHIVE & COCKFIELD, LLP

A handwritten signature in black ink, appearing to read 'Debra J. Milasincic', is written over a horizontal line. The signature is fluid and cursive.

Debra J. Milasincic, Esq.

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Date: July 31, 2003

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Enclosures

APPLICANT FACSIMILE OF FORM PTO-1449 REV 7-80 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO BGI-141CP	SERIAL NO. 09/667569
LIST OF PUBLICATIONS CITED BY APPLICANT (Use several sheets if necessary)	APPLICANT Yocum, R. Rogers et al.	
	FILING DATE September 21, 2000	GROUP 1652

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U.S. PATENT DOCUMENTS

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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A1 5,069,276	02/92	Yamashita et al.	424	686	
	A2 5,294,542	03/94	Sloma et al.	435	69.1	
	A3 5,518,906	05/96	Hikichi et al.	435	116	
	A4 5,529,908	06/96	Palva et al.	435	69.1	
	A5 5,534,420	07/96	Debono et al.	435	71.3	
	A6 5,599,689	02/97	Haynie et al.	435	42	
	A7 5,721,137	02/98	Fraschetti et al.	435	320.1	
	A8 5,756,536	05/98	Chen et al.	514	449	
	A9 5,856,165	01/99	Van Solingen	435	209	
	A10 5,912,164	06/99	Warneck et al.	435	280	
	A11 5,925,538	07/99	Perkins et al.	435	66	
	A12 5,932,457	08/99	Moriya et al.	435	146	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	A13 EP 224294 B1	06/87	EPO				
	A14 EP 493060 A2,A3	07/92	EPO				
	A15 EP 590857 A2	04/94	EPO				
	A16 WO 97/10340 A1	03/97	PCT				
	A17 WO 98/18954 A1	05/98	PCT				
	A18 EP 1001027 A2,A3	05/00	EPO			x	
	A19 EP 1001189 A2	06/00	EPO			x	
	A20 EP 1001192 A2	06/00	EPO			x	
	A21 EP 1001193 A2	06/00	EPO			x	
	A22 WO 01/83799 A1	11/01	PCT				

OTHERS (including Author, Title, Date, Pertinent Pages, Etc.)

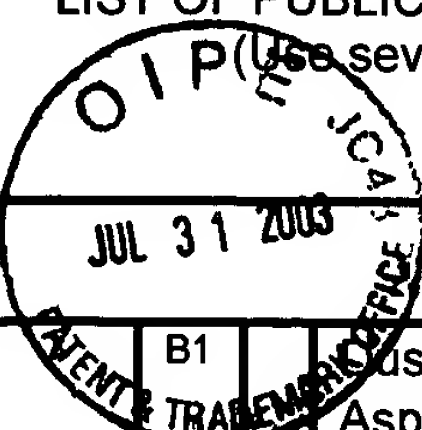
A23	Baigori, M. et al. "Isolation and Characterization of <i>Bacillus subtilis</i> Mutants Blocked in the Synthesis of Pantothenic Acid" <i>J. Bacteriol.</i> 173(13):4240-4242 (Jul. 1991)
A24	Downs, DM "Evidence for a new, oxygen-related biosynthetic pathway for the pyrimidine moiety of thiamine in <i>Salmonella typhimurium</i> " <i>J. Bacteriol.</i> 174(5):1515-1521 (Mar. 1992)
A25	Downs, DM et al. "apbA, a New Genetic Locus Involved in Thiamine Biosynthesis in <i>Salmonella typhimurium</i> " <i>J. Bacteriol.</i> 176(16):4858-4864 (Aug. 1994)
A26	Dusch, N. et al. "Cloning and characterization of the <i>C. glutamicum</i> ATCC13032 <i>panD</i> gene coding for L-aspartate-?-decarboxylase" no. P-L 06 (Mar. 1999)
Examiner	
Date Considered	
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B1	Busch, N. et al. "Expression of the <i>Corynebacterium glutamicum</i> panD Gene Encoding L-Aspartate- α -Decarboxylase Leads to Pantothenate Overproduction in <i>Escherichia coli</i> " <i>Applied and Environmental Microbiology</i> 65(4):1530-1539 (Apr. 1999)
B2	Elischewski, F. et al. "Pantothenate production in <i>Escherichia coli</i> K12 by enhanced expression of the <i>panE</i> gene encoding ketopantoate reductase" <i>J. Biotechnol.</i> 75(2-3):135-46 (Oct. 8, 1999)
B3	Elischewski, F. et al. "Identification and analysis of the <i>panE</i> gene involved in pantothenate biosynthesis in <i>Escherichia coli</i> K12" Abstract no. P-L 29 (Mar. 1999)
B4	Frodyma, ME et al. "ApbA, the Ketopantoate Reductase Enzyme of <i>Salmonella typhimurium</i> is Required for the Synthesis of Thiamine via the Alternative Pyrimidine Biosynthetic Pathway" <i>J. Biol. Chem.</i> 273(10):5572-5576 (Mar. 6, 1998)
B5	Frodyma, ME et al. "The <i>panE</i> Gene, Encoding Ketopantoate Reductase, Maps at 10 Minutes and Is Allelic to <i>apbA</i> in <i>Salmonella typhimurium</i> " <i>J. Bacteriol.</i> 180(17):4757-4759 (Sep. 1998);
B6	Hoch, JA et al. "Panspermia, spores and the <i>Bacillus subtilis</i> genome." <i>Nature</i> 390(6657):237-8 (Nov. 20, 1997)
B7	Jackowski, S. "Biosynthesis of Pantothenic Acid and Coenzyme A" in <i>Escherichia coli</i> and <i>Salmonella typhimurium</i> : Cellular and molecular biology, Second edition. (Neidhardt et al. Eds.) Washington, D.C.: American Society of Microbiology, 687-694 (1995);
B8	Kunst, F. et al. "The complete genome sequence of the Gram-positive bacterium" <i>Bacillus subtilis</i> " <i>Nature</i> 390(6657):249-56 (Nov. 20, 1997)
B9	Merkel, WK et al. Characterization and sequence of the <i>Escherichia coli</i> panBCD gene cluster" <i>FEMS Microbiol Lett.</i> 143(2-3):247-52 (Oct. 1, 1996)
B10	Ramjee, MK et al. " <i>Escherichia coli</i> L-aspartate- α -decarboxylase: preprotein processing and observation of reaction intermediates by electrospray mass spectrometry" <i>Biochem. J.</i> 323 (Pt 3):661-9 (May 1, 1997)
B11	Sahm, H. et al. "D-Pantothenate Synthesis in <i>Corynebacterium glutamicum</i> and Use of <i>panBC</i> and Genes Encoding L-Valine Synthesis for D-Pantothenate Overproduction" <i>Applied and Environmental Microbiology</i> 65(5):1973-1979 (May 1999)
B12	Shimizu, S. et al. "Ketopantoic Acid Reductase of <i>Pseudomonas maltophilia</i> 845" <i>J. Biol. Chem.</i> 263(24):12077-12084 (Aug. 25, 1988)
B13	Sorokin, A. et al. "Sequence analysis of the <i>Bacillus subtilis</i> chromosome region between the <i>serA</i> and <i>kdg</i> loci cloned in a yeast artificial chromosome" <i>Microbiology</i> 142:2005-2016 (1996)
B14	Vandamme, EJ "Production of vitamins, coenzymes and related biochemicals by biotechnological processes" <i>J. Chem. Tech. Biotechnol.</i> 53(4):313-327 (1992)
B15	Vandamme, EJ "The search for novel microbial fine chemicals, agrochemicals and biopharmaceuticals" <i>J. Biotechnol.</i> 37(2):89-108 (1994)
B16	GenBank U09529 <i>Salmonella typhimurium</i> LT2 ApbA protein (<i>apbA</i>) gene, complete cds. 07-DEC-1994
B17	GenBank P37402 2-dehydropantoate 2-reductase (Ketopantoate reductase) (KPA reductase) (KPR) 15-DEC-1998

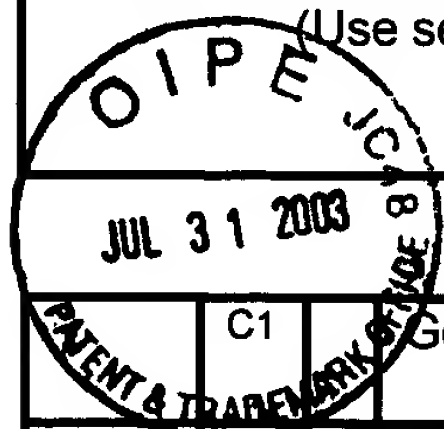
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				FILING DATE September 21, 2000	GROUP 1652
OTHERS (including Author, Title, Date, Pertinent Pages, Etc.)					
	C1	GenBank AAA56681 ApbA protein [Salmonella typhimurium] 07 DEC 1994			
	C2	GenBank Z99111 AL009126 Bacillus subtilis complete genome (section 8 of 21): from 1394791 26 NOV 1997			
	C3	GenBank P52996 3-Methyl-2-Oxobutanoate Hydroxymethyltransferase (Ketopantoate Hydroxymethyltransferase) 01 OCT 1996			
	C4	GenBank Z98682 Bacillus subtilis genomic DNA 23.9kB fragment 19 AUG 1997			
	C5	GenBank O34661 Probable 2-Dehydropantoate 2-Reductase (Ketopantoate Reductase) (Kpa Reductase) 01 NOV 1998			
	C6	GenBank CAB13317 similar to thiamin biosynthesis [Bacillus subtilis] 26 NOV 1997			
	C7	GenBank CAB11364 YlbQ protein [Bacillus subtilis] 19 AUG 1997			
	C8	GenBank P37402 2-dehydropantoate 2-reductase (Ketopantoate reductase) (KPA reductase) (KPR) 15 DEC 1998			
	C9	GenBank P52999 Aspartate 1-decarboxylase precursor (Aspartate alpha-decarboxylase) Aspartate 1-decarboxylase precursor (Aspartate alpha-decarboxylase) 15 DEC 1998			
	C10	GenBank P77728 2-dehydropantoate 2-reductase (Ketopantoate reductase) (KPA reductase) (KPR) 15 DEC 1998			
	C11	GenBank U09529 Salmonella typhimurium LT2 ApbA protein (apbA) gene, complete cds 07 DEC 1994			
	C12	GenBank Z98682 Bacillus subtilis genomic DNA 23.9kB fragment 19 AUG 1997			
	C13	GenBank P37253 Ketol-acid reductoisomerase (Acetohydroxy-acid isomeroreductase) (Alpha-keto-beta-hydroxylacil reductoisomerase) 15 DEC 1998			
	C14	GenBank P37252 Acetolactate synthase small subunit (AHAS) (Acetohydroxy-acid synthase small subunit) (ALS) 15 DEC 1998			
	C15	GenBank P37251 Acetolactate synthase large subunit (AHAS) (Acetohydroxy-acid synthase large subunit) (ALS) (Vegetative protein 105) (VEG105) 15 JUL 1998			
	C16	GenBank P52998 Pantoate--beta-alanine ligase (Pantothenate synthetase) (Pantoate activating enzyme) 15 DEC 1998			
	C17	GenBank P51785 Dihydroxy-acid dehydratase (DAD) (Vegetative protein 110) (VEG110) 15 DEC 1998			
	C18	GenBank F69875 pyrimidine-thiamin biosynthesis homolog ylbQ - Bacillus subtilis. 05-NOV-1999			
	C19	EMBL L47709 Bacillus subtilis (clone YAC15-6B) ypiABF genes, qcrABC genes, ypjABCDEFGH I DE genes, birA gene, panBCD genes, dinG gene, ypmB gene, aspB gene, asnS gene, DE dnaD gene, nth gene and ypoC gene, complete cds. 23 JAN 1996			
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